Claims

1) Process for the production of a fertilizer, the process comprising intimately mixing urea and a lignin compound thereby providing a blend, and heating the blend.

2) Process according to claim 1, further comprising admixing mineral fertilizer material.

3) Process according to claim 1, further comprising admixing organic fertilizer material.

4) Process according to claim 1, for the production of an organomineral fertilizer, the process comprising intimately mixing mineral fertilizer material, urea, a lignin compound and organic fertilizer material thereby providing a blend, and heating the blend.

5) Process according to claim 4, wherein the organomineral fertilizer comprises 20-80 wt.% mineral fertilizer material, 2-40 wt.% urea, 20-80 wt.% organic fertilizer material and 0.5-5 wt.% of a lignin compound based on the total weight of the organomineral fertilizer.

6) Process according to one of claims 2, 4 or 5, wherein the mineral fertilizer material comprises one or more of diammonium phosphate (DAP), monoammonium phosphate (MAP), phosphate rock, potassium chloride (MOP), potassium sulphate (SOP), single superphosphate (SSP), triplesuperphosphate (TSP), ammonium sulphate (AS), ammonium chloride, ironsulphate and magnesiumsulphate.

7) Process according to one of claims 3, or 4-6, wherein the organic fertilizer material comprises one ore more of poultry manure, chicken manure, cattle manure, pig manure, vegetable residues of litter, green waste, mushrooms, peanut hulls, coconut hulls, cacao-hulls, and grass.

8) Process according to one of claims 3-7, wherein the organic fertilizer material is pre-treated, and wherein the pre-treatment comprises drying the organic fertilizer material.

9) Process according to one of claims 1-8, wherein the lignin compound is a powder or a liquid.

10) Process according to one of claims 4-9, comprising:
a) blending mineral fertilizer material, urea, and organic fertilizer material;
b) blending a lignin compound with the fertilizer blend obtained at a);
c) warming and moistening the blend obtained at b);
d) heating the blend obtained at c).

11) Process according to claim 10, wherein the warming and moistening at c) of the blend obtained at b) comprises leading steam into the blend.

12) Process according to one of claims 1-11, wherein the heating of the blend is performed by pelletising the blend and optionally heating the blend.

13) Process according to one of claims 12, wherein pelletising is performed at pressures between 90 and 120 bar.

14) Process according to one of claims 1-13, further comprising cooling, crushing and sieving the product obtained after heating, and coating sieved particles obtained after sieving.

15) Process according to one of claims 1-14, wherein the lignin compound comprises one or more of lignin and lignosulfonate.

16) Process according to one of claims 1-15, wherein the pH during blending is maintained between 6 and 7.5.

17) Fertilizer obtainable according to one of claims 1-3.

18) Organomineral fertilizer comprising mineral fertilizer material, urea, organic fertilizer material and a lignin compound obtainable according to one of claims 4-16.

19) Organomineral fertilizer according to claim 18, comprising 20-80 wt.% mineral fertilizer material, 2-40 wt.% urea, 20-80 wt.% organic fertilizer material and 0.5-5 wt.% of a lignin compound based on the total weight of the organomineral fertilizer.

20) Organomineral fertilizer according to claims 18 or 19, comprising 25 to 75 wt.% of water-soluble organic nitrogen, 15 to 70 wt.% water-soluble mineral nitrogen and 5 to 25 wt.% of water-insoluble organic nitrogen of the total-N content of the organomineral fertilizer.